ABSTRACT

A method for the multiple fluorescence detection of fluorophores is provided. An ultrasensitive and quick detection of multiple fluorescences of fluorophores in the range of sub-nanoseconds to a few milliseconds is simultaneously ensured is described, by a virtually simultaneous measurement of the decay time of the fluorescences, where the excitation wave lengths for the individual fluorophores, delayed through an optical delay in the range of sub-nanoseconds to some milliseconds, are conducted to the objects of examination so that the fluorescences can be excited and detected one after the other. For the differentiation between at least two fluorophores in addition to their spectral characteristics, the decay behavior of the fluorescence processes is examined by the displacement of electronic gates in the nanosecond range along a timing axis.